DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention]This invention relates to the directions for the transdermal preparation agent distribution system designed supply effective medication to skin carcinoma, the focus, and an infectious disease on thrapeutics, and this system in more detail about a drugs distribution system.
[0002]
[Description of the Prior Art]The transdermal preparation agent distribution system is used for introducing over several years and a certain drugs effectively in a blood flow, without carrying out the puncture of the skin. As the amenity and convenience being another, the transdermal preparation agent distribution system can avoid a potential toxic fear of accompanying traditional administration art, such as a gastrointestinal tract, a problem of a speed of supply and oral supply, supply within a muscle, or intravenous supply. Since transdermal preparation agent supply resembles the secretion system of the body itself, it is proved, for example that it is effective especially to supply melatonin and other natural hormone to the body as for such a distribution system. Transdermal preparation agent supply has conveyance into the blood flow of the substance through conveyance into the blood flow of the drugs through the stratum cutaneum membranae tympani which answers traditionally that the stratum corneum epidermidis and water losses should be prevented (single or plurality), and the skin. The transdermal preparation agent supply tools known conventionally are reservoir form tools provided with the film, the pressure-sensitive adhesion matrix, and the dermal patch.
[0003]It has become clear that use of the transdermal preparation agent supply tools relevant to an supersonic method or the iontophoresis helps supply of a certain drugs. For example, the iontophoresis carries out assistance which conveys nature drugs of ion, such as interferon and a protein molecule, in a blood flow via the stratum cutaneum membranae tympani from a distribution system using potential difference. It is desirable to treat for example, by continuous supply of one or more kinds of drugs to a specific site with a certain disease like the local administration for the intralesional administration for a certain skin carcinoma and a certain skin infection. For example, these days, they are tuberosity and epithelial-basal-cells cancer (). [nonduloulcerative and superficial basal cell carcinomas and] It has become clear that people's leukocyte interferon (human natural leukocytic interferons, HNLI) by birth, for example, recombination interferon-alpha, or beta2b, and/or 2c are effective in the therapy of BCC. Although a traditional therapy needs the surgical resection of a cancerous part, it is proved whether the therapy in the focus of the cancerous part by HNLI has a risk of accompanying an operation and a recurrence and that it becomes and is an effective method.
[0004]The general medication in such a therapy is abbreviation 1.5 x10 ^{6}IU. About the period by three weeks, this is the quantity of this 3 times per week, and often needs to go to hospital regularly at least 9 times for a therapy. However, one fault of this cure is needing an intervention of a doctor or other health care professionals for the degree of each medication. Although expense increases and such a doctor's etc. intervention is troublesome, since an operation of other minus to the opportunity and/or drugs which a medicine is prescribed comparatively so much for interferon, therefore toxicity produces at a given degree of going to hospital regularly increases, it is required. Although there is no necessity for the intervention in which the use of a traditional transdermal preparation agent distribution system of a doctor and other health care professionals is strong, therefore the expense and the heavy burden of such

going to hospital regularly are not undertaken, the traditional transdermal preparation agent distribution system which conveys drugs via the stratum corneum epidermidis of the skin does not fit such a therapy. The therapy which uses interferon is a therapy in the focus (intralesional), and it is because it is not a systemic therapy in essence.

[0005]A trichophytia mycosis and dogged skin infection like dermatophytosis also often need local and/or hypodermic administration of the long period of time of one or more kinds of drugs, in order to treat this effectively. However, generally, unless a compromise is reached, the therapy of such an infectious disease is barred. It is because it is impossible in whether a prolonged administration schedule is desired by the strictness of that a patient is local and/or hypodermic drugs supply. Although pointed out again, a traditional transdermal preparation agent distribution system making the therapy of such an infectious disease easier (every day or not frequent administration but attachment of one patch at one week may be sufficient), and it being validated more (fixed drug concentration is supplied to a disease site), however it. It is not desirable at the point of leading drugs (single or plurality) to a blood flow.

[0006]

[Problem(s) to be Solved by the Invention]Therefore, the directions for the drugs distribution system which can carry out endermic supply effectively locally, and this system are requested from various layers of the skin, without a traditional transdermal preparation agent distribution system being comfortable, and being convenient, having the strong point of supply control nature, and introducing drugs into a blood flow.

[0007]

[Means for Solving the Problem]One or more kinds of drugs of a transdermal preparation agent distribution system of this invention are quick using letter tools of an endermic patch, The above and other problems which accompany conventional technology by performing easy and exact local supply are solvable, Therefore, while the amenity, convenience, and speed controllability of a traditional transdermal preparation agent distribution system are acquired, a suitable treated area can be effectively medicated with drugs, and introduction of drugs to inside of a blood flow can be prevented. Although the term "endermic distribution system (transdermal delivery system)" used on this application specifications can convey one or more kinds of drugs via some layers of the skin, it means a distribution system which does not introduce these drugs into a blood flow. In a transdermal preparation agent distribution system of this invention, an endermic supply patch provided with some layers is manufactured. The top layer of a patch consists of impermeable polymer or foil, and prevents disclosure of drugs from a crowning of a patch. One or more "bags (pouches)" which accommodates drugs (single or plurality) which should be supplied with a patch is sandwiched among interlayers of a patch. A lower layer (layer attached to a patient's skin removable) of a patch has one or more fields which consist of adhesive materials. An adhesive material is exposed namely, activated in order to attach a patch to an adequate position of the skin removable. Supply of drugs is performed by applying predetermined time until a patch is removed and/or it is exchanged.

[0008]Conveyance of drugs which pass along a patch is always performed. Quantity and concentration of drugs (single or plurality) in a bag (single or plurality) determine speed by which drugs (single or plurality) are supplied to a patient. However, when drugs have the amount of polymers like interferon, auxiliary conveyance which used an ultrasonic wave or iontophoresis can perform. In order to supply so that drugs may not be introduced into a blood flow, an auxiliary device is controlled carefully. When using iontophoresis, once a patch is arranged in an adequate position, an electrode will be applied to the

skin and conveyance of drugs which pass along a layer of the skin will be assisted. If voltage is impressed to the skin via an electrode, endermic supply of interferon will be performed. Into a blood flow, although they are supplied [local and / hypodermic] to a target in the focus by drugs, it is determined carefully and impressed electromotive force is adjusted so that it may not be introduced. As for drugs, emulsifying is preferred in order to make the conveyance easy.

[0009]If a new positioning system and a method of U.S. patent application 08th under pendency / statement of No. 616,173 are used, a patch will be arranged easily and properly by a patient or other non-health care workers during a therapy. An ease of use by a distribution system of this invention, An operation of other minus to comparatively little continuous medication of an opportunity or drugs with toxicity does not need to perform a low thing and many going to hospital regularly for which a patient or other non-health care workers were conjointly needed in relation to a traditional therapy gestalt, and makes it possible to perform an effective therapy. This invention relates to use of an inclusion agent for weakening systemic absorption of drugs and giving the optimal organization level of drugs again. This invention relates to a method of treating those who suffer from a certain kind of skin carcinoma. A method of this invention carries out intralesional administration of the interferon in a controlled continuous discharge mode so that people may be provided with interferon of a therapeutic level for a long period of time. As for this method, it is preferred to carry out using the above-mentioned drugs distribution system. By use of such a system, people can be medicated with interferon by an effective and useful method.

[0010]According to one embodiment, fixed time administration of the interferon is carried out by a drugs distribution system indicated to this application at those who suffer from tuberosity, epithelial-basal-cells cancer, or an epithelium tumor of same class. This invention relates to a therapeutic method of those who suffer from a certain skin infection. A method of this invention is the controlled continuous discharge mode by which people are provided with a prolonged therapeutic level of drugs, is local, and/ or performs hypodermic administration. [of one or more kinds of drugs] As for a method of this invention, it is preferred to carry out using the above-mentioned drugs distribution system. By use of such a system, people are medicated with drugs in an effective and convenient mode. According to another embodiment, fixed time administration of griseofulvin, ketoconazole, yne TORAKO Nazor, or one or more kinds of drugs like these combination is carried out via the above-mentioned drugs distribution system at those who suffer from dermatophytosis or dogged skin infection of same class.

[0011]

[Embodiment of the Invention]With reference to an accompanying drawing, this invention is explained below so that he can understand this invention and its strong point more nearly thoroughly. Reference of drawing 1 shows the transdermal preparation agent distribution system 10 of this invention here. The distribution system 10 is the multilayer polymer patch provided with the upper layer 20 and the lower layer 30. As for the upper layer 20, making with impermeable polymer or foil is [that disclosure of the drugs (single or plurality) which pass along the crowning of the distribution system 10 should be prevented] preferred. The lower layer 30 functions considering one or more fields of the adhesive material 40 as a wrap release (release) sheet. If the skin adheres to the distribution system 10, the lower layer 30 will adjoin the skin directly and will be arranged. The lower layer 30 consists of silanizing polyester (silanizedpolyester) or other suitable release materials, and has a thickness of 50-100 microns. Other layers consist of one or more acrylate polymeric materials.

[0012]The seal of the upper layer 20 is carried out to the control film 50 so that the 1st chamber 60 and

the 2nd chamber 70 may be created. The seal of the upper layer 20 is carried out to the control film 50 so that the seal with which it is [between the upper layer 20 and the control film 50] more durable may be formed rather than between the 1st chamber 60 and the 2nd chamber 70. The control film 50 can form the barrier prevent from penetrating if the contents of the 1st chamber 60 and the 2nd chamber 70 are independent, and can make it from ethylene vinyl acetate or the same material. In the 1st chamber 60, it is put into the drugs which should be emitted with the distribution system 10. In the 2nd chamber 70, it is put into one or more kinds of drugs supply enhancement agents, such as solution and/or an alcohol solution. Since systemic absorption of drugs is prevented and the optimal organization level of drugs is obtained, an inclusion agent like cyclodextrin can be put in in the 2nd chamber 70.

[0013]The 1st chamber of the above and the 2nd chamber adjoin mutually, they are arranged, however as shown in drawing 2, they can also be made into other suitable arbitrary relative configuration. Or if it is a request, a single inner chamber can also be used. If the seal of the drugs (single or plurality) which should be supplied is carried out into penetrable polycarbonate membrane instead of the upper layer 20 which forms one or more inner chambers and a pressure is applied, it can constitute so that a film may explode and supply of drugs (single or plurality) may be started. Other embodiments of the distribution system 10 of this invention are shown in drawing 2, and the same element as drawing 1 is shown by the same reference number here. Since a part of seal 80 between the 1st chamber 60 and the 2nd chamber 70 is made from this embodiment weaklier than the seal between the upper layer 20 and the basement membrane 50, the seal 80 is destroyed by the pressure applied to the distribution system 10, and the contents of both the chambers 60 and 70 are mixed.

[0014]When using it, the release sheet of the lower layer 30 is removed and the adhesive material 40 is adhered to people's skin removable. The exact adhering position of the distribution system 10 is determined using the unique and new positioning system indicated by U.S. patent application 08th of Fuisz under pendency / No. 616,173. In order to use such a positioning system and a method, the distribution system 10 has one or more marks which should be adjusted to the correspondence mark on a treatment region and which are not eliminable. Once it is arranged properly, the weak seal between the 1st chamber 60 and the 2nd chamber 70 will be destroyed by the pressure which people apply to the distribution system 10, and the contents of both chambers will be mixed. Although the control film 50 functions as a barrier which they do not make penetrate these if any contents of the 1st chamber 60 or the 2nd chamber 70 are independent, the mixture of both contents can penetrate the control film 50, and supply of mixed drugs to people is started.

[0015]People's leukocyte interferon by birth for performing the therapy of tuberosity and epithelial-basal-cells cancer, recombination interferon-alpha or beta2b and/or 2c, or these combination are filled up with one desirable embodiment of the distribution system 10 into the 1st chamber 60. The optimal medication range used for this embodiment is experientially determined in request time etc. when a suitable dosage is supplied. According to this embodiment, interferon is first uniformed with soybean lecithin (phosphatidylcholine) under existence of water and a nonpolar solvent. This microemulsion gel is formed from the dynamic network of a flexible long and multiplex molecule coagulum. In order to use it for the distribution system of this invention from the characteristic of hyperviscosity and translucency, the microemulsion gel of lecithin is ideal. It is because these have fusibility in (1) interferon, it functions as a (2) skin penetration enhancement agent and it consists of harmless ingredients, such as soybean lecithin of (3) nature, fatty acid ester (IPP), and water. making the microemulsion gel of lecithin -- one organic solvent in ****** -- the isopropyl myristate and isopropylpalmitate (IPP) can be used

preferably.

[0016]Griseofulvin for the 1st chamber 60 to treat dermatophytosis or skin infection of same class, ketoconazole, yne TORAKO Nazor, etc. are filled up with other embodiments of the distribution system 10. Also in this case, the optimal medication range of this embodiment is determined according to the kind of infectious disease, the kinds of drugs (single or plurality) or these combination, and a treatment period. As mentioned above, although the desirable embodiment of this invention was shown in the accompanying drawing and explained in detail, he should understand that many change of parts and a component is possible, without not restricting this invention to these embodiments and deviating from the range of this invention.